Public Participation

and

Response to Comments

on the

Blackfoot River TMDL:
Waterbody Assessment and
Total Maximum Daily Load

Chronology of Public Involvement Process

Blackfoot River Subbasin Assessment and Total Maximum Daily Load

Department of Environmental Quality, Pocatello Regional Office

- June 2000 – 30 copies of draft Blackfoot River subbasin assessment mailed to Blackfoot River Watershed Advisory Group members and select public. Open public comment period.

- June 7, 2000 – Presentation of Blackfoot River subbasin assessment to Upper Snake River Basin Advisory Group in Idaho Falls.

- April 2001 – Advertisements and articles placed in several local newspapers announcing the public comment period on the draft Blackfoot River subbasin assessment and total maximum daily load. These ads appeared as follows: DEQ press release of April 19; Sho-Ban News, April 26 and May 1; Blackfoot Morning News, April 6 and April 28; Caribou County Sun, April 26, May 3; Idaho State Journal, April 22 and 30.

- April 28 and May 5, 2001, the Blackfoot River Watershed Council sponsored public workshops in Blackfoot and Soda Springs. These workshops presented the TMDL and additional information.

- May 9, 2001, DEQ regional office mailed out 30 copies of the draft subbasin assessment and TMDL to members of the Blackfoot River Watershed Council and selected public. DEQ posts the draft TMDL on the web at http://www2.state.id.us/deq/water/tmdls/blackfoot_river/blackfootriver_tmdl.htm#tmdl

- June 4, 2001, public comment period ends.

Response to Comments to the Draft Blackfoot River TMDL
Waterbody Assessment and Total Maximum Daily Load

We received comments from five parties (attached). Our responses to those comments are presented below. We present a summary of the concern prior to our response.

General comments

Targets

Concern was expressed about the targets. The key to water quality improvement is not the target, it is support of beneficial uses. The target is determined based on the best information we currently have. It may be determined through monitoring that current recommended targets are higher, or lower, than what is needed to support beneficial uses. The importance of an adequate monitoring plan, to be developed as part of the implementation plan, can not be overemphasized.

Natural conditions

We did not feel data were sufficient to estimate natural background levels of pollutants. Unfortunately, there is no stream in southern Idaho which could serve as a 'reference' stream for the Blackfoot River. A reference stream would allow for estimating expected natural conditions in the Blackfoot River.

Targets are recommended at levels which are felt will support beneficial uses. These targets do not differentiate between natural or human-caused pollutant sources. Thus, if combined natural and human pollutant contributions meet recommended target levels, beneficial uses should be supported.

Idaho Department of Lands (Patrick Brown, contact)

1. Idaho Department of Lands (IDL) is concerned the plan did not identify that the Proper Functioning Condition Assessment was a cooperative effort organized by the Blackfoot River Watershed Council and included participation by several agencies.

   The TMDL will be revised to include the suggested change.

2. Efforts by Idaho Department of Lands to improve water quality on IDL-managed land should be recognized.

   The TMDL will be revised to include the suggested change.

Blackfoot River Watershed Council (Charlotte Reid, contact)

1. Basic yearly weather patterns and inconsistency in collection of data, both time and place were not considered

We agree that data are limited and often only provide a snapshot of subbasin conditions, and certainly don't provide information over various weather and water conditions. We would have preferred working with data which had been collected throughout the year over many years (and thus various weather patterns and water years) at strategic sites. Such information was not available and we have attempted to do our best with the data at hand. The targets recommended in the TMDL are what we feel are needed to support beneficial uses identified in the Blackfoot River subbasin. However, we may find that, through the monitoring plan to be developed as part of the implementation plan, the recommended targets are higher or lower than what is needed for beneficial use support.

2. Historical impacts were not adequately considered

Historic land management practices have contributed to problems evidenced in the Blackfoot River subbasin, today. On many streams, conditions may be better now than decades previous. However, the data, though limited as they may be, do indicate problems in the subbasin.

It took years for some stream reaches to be degraded and it will take years for some of these stream reaches to recover. It is important for the implementation plan to establish a reasonable time frame for improvement in water quality.

3. Greater consideration should be given to activities meant to restore water quality

Many individuals, groups, organizations, and agencies have been involved in water quality improvement within Blackfoot River subbasin through, for example, riparian and upland improvement. These activities were mentioned in Section 2.3. We would welcome information on projects that we may have inadvertently missed. As to the direct benefits of these programs and projects in terms of pollutant input reductions, we are reliant upon others (such as the funding agency) for information as to success of these efforts.

We agree that many positive steps have been taken by individuals, grazing groups, and agencies to improve rangeland and riparian management. We would hope that this level of commitment will continue into the future.

Many activities contribute to degradation of water quality in the Blackfoot River subbasin, such as roads and recreation. Unfortunately, we did not uncover information as to the extent of impact of these activities. Strategies to reduce the impacts from these activities on water quality should be addressed in the implementation plan.

4. 80% streambank stability reduction through the watershed is unattainable.

We disagree. As mentioned in the TMDL, pristine conditions in Middle Fork Salmon River generally have 80% streambank stability or greater. Much of the Middle Fork is in the Idaho Batholith which is characterized by sand-size sediment. The loamy soil in the Blackfoot River subbasin should support even greater riparian growth, and thus promote greater streambank stability. The Proper Functioning Condition assessment lends support to this supposition as the mean streambank stability for Properly Functioning stream reaches was 95% and for Functioning at Risk reaches was 80% (Table 3.2-13).

The recommended streambank stability target of 80% is for each 303(d)-listed stream rather than the subbasin as a whole. In other words, the mainstem Blackfoot River could not be below 80% with the idea that the tributaries would be above 80% such that overall streambank stability in the subbasin would be greater than or equal to 80%.

5. Ramping rates from Blackfoot Reservoir were not considered as to their impact on water quality.

We recommended targets we feel are needed to support beneficial uses. The implementation plan will determine what needs to be done to meet those targets. To look at the effect of ramping rates on, streambank stability in the lower Blackfoot River would require more, or perhaps new, information than is currently available.

6. An understanding of human versus natural impacts is needed.

Estimating natural contributions of pollutants is difficult. Unfortunately, for southern Idaho, DEQ has been unable to identify a stream that has not experienced some level of human impact. Therefore, we have no reference streams to compare with the Blackfoot River. However, targets recommended in the TMDL are at levels we feel are needed to support beneficial uses regardless of whether the impact is natural or human-induced.

7. There is concern about the time frame within which targets are expected to be met.

We give no exact time frame within which targets are to be met, or more importantly, beneficial uses are to be supported. The implementation plan is the instrument to develop a plan to undertake practices and programs to improve water quality and set forth a timeline of expected progress toward beneficial use support. It is important to show movement toward the goal as the vagaries of weather and water can significantly influence progress toward reduction in pollutant input, especially as it concerns sediment.

8. Impacts to cultural and economic resources are not being addressed.

Our mandate is to recommend those targets we feel are needed to support beneficial uses in this initial phase of the TMDL process. For a valid discussion of the true costs of supporting beneficial uses, we must know as best we can what our goals are. If, at this stage, we were to consider cultural and economic impacts, a full discussion of improving water quality could not occur. It is the implementation phase which should consider how best to go about supporting beneficial uses from an economic and cultural perspective.

9. The Council is concerned that if streambank stability targets are not met below the reservoir, targets above the reservoir must be even more stringent to ensure that an average of 80% stability.

Targets are for individual streams, not the subbasin as a whole. Therefore, 303(d)-listed streams below the reservoir must meet the target of streambank stability greater than or equal to 80%, whether it be mainstem Blackfoot River, Corral Creek, or any other tributary.

10. Time and support should be given to allow collection of additional data to improve the TMDL plan.

We agree that collection of additional data could be used to improve the TMDL. The chances of this happening will depend on the availability of additional resources (i.e., money and time). Regardless, we feel data are adequate to establish targets that will go a long way towards achieving beneficial use support.

Natural Resources Conservation Service (Scott Engle, contact)

1. The target of 80% streambank stability, as found in Idaho wilderness areas, may be more stringent than needed to support beneficial uses in the Blackfoot River.

Please see General Comments: Targets and Response 4 to Blackfoot River Watershed Council.

2. The 80% streambank stability target is impossible to attain in mainstem Blackfoot River below the reservoir after it leaves the canyon. Therefore, 80% streambank stability is not a reasonable goal in the mainstem.

Deviation from a more natural hydrograph (e.g., release of water from the reservoir, movement of out-of-basin water into the subbasin) has been mentioned as contributing to bank instability in lower Blackfoot River. We would hope that the implementation planning process might look at creative ways to reduce the effect of these activities.

We feel at this time that an 80% streambank stability target will lead to support of beneficial uses in the lower Blackfoot River. We may find that beneficial uses may actually be supported at stability levels less than, or more than, the recommended 80%. The goal is support of beneficial uses. It is suggested a more reasonable goal be chosen although no alternative with supporting data was suggested.

3. There is concern about the depth fines targets of less than 25% by volume of fine sediment less than 6.25 mm.

Data were presented on current conditions of stream subsurface sediment in Table 2.2-12. There is abundant literature to suggest that trout spawning is affected at higher subsurface sediment levels. No article was reviewed that indicated salmonids (e.g., cutthroat trout) in watersheds with a loam soil base could tolerate higher levels of sediment than about 25%.

The length of time needed for a stream to 'cleanse' itself of sediment down to the levels recommended for depth fines is dependent on precipitation, runoff patterns, and overall watershed improvements. Low water years coupled with low peak flows will not move sediment out of the streambed as quickly as high-sustained peak flows. When setting timelines for reductions in sediment in the implementation plan, it needs to be emphasized that such expectations are subject to climatic vagaries.

4. The phosphorus target is a concern in an area with high levels of natural phosphorus.

Only the mainstem Blackfoot River and Wolverine Creek were listed as having possible nutrient problems. We are not aware of natural deposits of phosphorus in Wolverine Creek watershed. Although phosphorus occurs naturally in large quantities in the upper Blackfoot River, we do not know what ameliorating effects the reservoir has on inputs of phosphorus from this area. In either case, we did not feel data were sufficient to accurately estimate natural levels of phosphorus and we agree that such information would be beneficial.

Astaris LLC (Gary Resh, contact)

1. The TMDL inaccurately applied cold water biota to identified ephemeral and intermittent stream segments.

We disagree that Dry Valley Creek meets the definition for ephemeral waters in that we do not believe the current or historic channel of DVC is or was above the water table. We agree that DVC is shown on Dry Valley, Idaho and Upper Valley, Idaho USGS 7.5-minute topographic maps as having intermittent sections. The upper intermittent section shown on the Dry Valley map reaches from Young Ranch to the middle of the meadow between elevations 6520 ft and 6540 ft. Downstream, the Upper Valley map indicates one of two channels as intermittent just below the confluence of Maybe (Canyon) Creek near Benchmark 6454. The final section of stream designated as

intermittent, as shown on the Upper Valley map, has an upstream boundary just upstream of elevation 6420 ft stretching to a downstream point about elevation 6400 ft.

As suggested by Astaris, DEQ would agree to let the USGS topographic maps be the arbiter in terms of intermittent flows in Dry Valley Creek. Using the USGS topographic maps to determine intermittent waters as you have suggested indicates that DV-2 and DV-7 are sited on reaches with perennial waters. Thus, it would appear that their intermittent nature has occurred since the USGS maps were issued, 1951 for Upper Valley and 1949, revised in 1984, for Lower Valley and Dry Valley Creek. Unless it can be shown that more of Dry Valley Creek was intermittent prior to 28 Nov 1975, then DEQ will use the USGS topographic maps as our basis for determining perennial flows in DVC.

Questions were raised as to appropriate beneficial uses identified for Dry Valley Creek. We know that salmonid spawning is an existing use in lower Dry Valley Creek. In 1979, Thurow (1980), while conducting spawning ground surveys, documented spawning cutthroat trout in the section of DVC from the mouth up to 2.2 km (1.4 mi). In a subsequent survey in 1980 (Thurow 1981), spawning cutthroat trout were observed in the lower 1.0 km but 2.2 km were estimated as being accessible to the spawning fish. As the requirements for salmonid spawning are more stringent than those needed for support of cold water aquatic life, we assume that cold water aquatic life was also supported during the time of Thurow's work. According to 40 CFR 131.3 uses actually attained in a water body since 28 November 1975 are considered existing uses and must be protected for.

Even for intermittent waters, cold water aquatic life standards apply when flows are greater than 1 cfs (IDAPA 58.01.02.070.07). If current flows at DV-1, DV-2 and DV-7 are zero, we cannot expect cold water aquatic life to be supported. However, at all other times, cold water aquatic life is considered an existing beneficial use.

Two sites were sampled in Dry Valley Creek in 1995 using DEQ's Beneficial Use Reconnaissance Project (BURP) protocol. The upper site was at the upstream end of the lower intermittent area as shown on the Upper Valley map. Although this site showed Not Full Support for coldwater aquatic life, it can be argued that the area is intermittent and that the Water Body Assessment Guidance should not apply to that site and the section of stream it characterizes. Therefore, DEQ will sample again upstream of this site in a section of stream which the Upper Valley map indicates as perennial.

The lower BURP site was located about 0.6 mi above the confluence of DVC and Blackfoot River. Assessment of the site indicated neither support or non-support of coldwater aquatic life and was thus classified as needing verification.

A request was made to change the use of Dry Valley Creek through a Use Attainability Analysis (UAA) as outlined in 40 CFR 131.10(g). However, a UAA cannot be used to change existing uses (those uses in place after 28 Nov 1975). In addition, DEQ has adopted the practice that no UAAs will be done prior to a TMDL being written.

Until a TMDL is written we do not know if a beneficial use is or is not being supported. Thus, we view doing a UAA before a TMDL as premature. A UAA may require substantial time and resources to complete. As DEQ is still under a court-mandated schedule to complete TMDLs in a timely fashion, we have decided to delay UAAs to a later time.

Based on data at hand, it does not appear that water column sediment (i.e., total suspended solids) would justify the listing of sediment as a problem in DVC. We agree that levels of total suspended solids are lower than what the literature suggests is needed to maintain a good fishery (EIFAC 1964). However, we do see, based on limited sampling, high levels of fine subsurface sediment (i.e., depth fines) in DVC (Table 2.2-12). Thus we are either failing to see channel flushing flows sufficient to move sediment out of the streambed or current sampling is not giving us an adequate picture of sediment movement in Dry Valley Creek. Establishing a link between water column sediment and surface and subsurface sediment is difficult and was not done in DVC. It is for this reason that we established targets for both water column and subsurface sediment.

Blackfoot River from its headwaters to the Blackfoot Reservoir is listed as having excessive levels of sediment input. Dry Valley Creek, as a tributary to Blackfoot River, contributes to the sediment load in Blackfoot River. Until the Blackfoot River and Dry Valley Creek are both supporting their beneficial uses, we feel it is not justified to allow additional sediment input solely because current levels are below recommended targets.

The question was raised as to why Dry Valley Creek was listed on the 303(d) list in the first place. The Environmental Protection Agency (EPA) took DEQ's 1992 305(b) list and adopted it for the 1994 303(d) list. The Beneficial Use Reconnaissance Program was set up to assess the accuracy of these listings. As mentioned above, BURP monitoring did not indicate full support of beneficial uses in DVC.

2. The Assessment and proposed TMDL use several inconsistent methods to determine target levels for sediment (via TSS/turbidity measurements).

Please see General Comments: Natural Conditions which speaks to the effort to separate 'background concentrations from man-made impacts'.

The comment is made that the working assumption of the Assessment is that 'water quality problems result from natural landslide or beaver or geologic conditions.'

- 'Astaris does not understand how a background sediment yield can be established for comparison with current levels of sediment and TMDL sediment goals if the soils in the basin below Wolverine Creek to Miner Creek are highly erodible.'

  We are not sure of the point that is trying to be made here. Many soils are highly erodible if disturbed. Human activities which add to sediment levels above that of natural disturbance will therefore result in increased sediment input into a waterbody. If Astaris is aware of data which speak to natural background levels, we would welcome such information.

'Astaris cannot locate within the Assessment the monitoring data collected for mining baseline and abandoned mine land evaluation purposes.'

We do not describe any report cited in the TMDL to any great length. Tables 2.2-12, C-1, D-1, and E-1 all contain information collected by various consultants or agencies working in the phosphate mining areas of the upper Blackfoot River. These reports are by Aware 1979 (cited in Rich 1999); Mariah Associates 1982, 1990, 1991, 1992, and 1993; Mariah Associates 1991, 1992, 1993, 1994, 1995, and 1997 (cited in Rich 1999); TRC Mariah Associates 1996; BLM and USFS 1976 (cited in Rich 1999); Rich 1999; and BLM et al. 1999.

Although reference is made that Astaris presumes additional data exists, none was provided with the comments. Most of the above information was cited in the Subbasin Assessment sent out for public review in May 2001. If the information was minimal and incomplete then, notification at that time would have allowed us to incorporate additional data.

'Table 2.1-6. Please define the values for the rating 0-25, 25-50.'

Table 2.1-6 does not reference these values so we are not sure what is meant by this comment.

'Land use coverage reference is 30 years old; this has likely changed since that time.'

We agree that land use has changed in the last 30 years. For example, we know that mining in the Blackfoot River subbasin has expanded and with the advent of the Conservation Reserve Program, agriculture land use has changed. A more recent map of land use will be incorporated into the TMDL.

There is concern that the targets for upper Dry Valley Creek differ from those recommended for lower Dry Valley Creek, neither of which falls in line with the state water quality standard for turbidity.

Distinction must be made between standards and targets. All streams in the Blackfoot River subbasin fall under state water quality standards for turbidity: 'Turbidity, below any applicable mixing zone set by the Department, shall not exceed background turbidity by more than fifty (50) NTU instantaneously or more than twenty-five (25) NTU for more than ten (10) consecutive days.' (IDAPA 58.01.02.250.02.d). Targets, as recommended in the Blackfoot River TMDL, are levels which we believe are needed to restore and/or support beneficial uses.

Astaris, citing Rich 1999, points out there is no major fish community in Dry Valley Creek. Again, based on Thurow's work, there did exist a spawning community of cutthroat trout after 28 Nov 1975.

The literature, as outlined in the TMDL, indicates that a good fishery can exist at levels of suspended solids less than 80 mg/l. Research also indicates that the ability of fish to withstand a particular level of suspended solids is dependent on the duration of that concentration. Thus, we recommended turbidity targets above mining activities that correspond to total suspended sediment concentrations of 50 mg/l at low flow and 80 mg/l at high flow.

Data collected by Astaris shows turbidity levels, and corresponding sediment levels, are below those recommended for DVC above mining activities. We commend Astaris on their efforts to keep sediment input into DVC low and see no reason why they cannot continue their fine job. To recommend higher targets in lower DVC would only add to the total sediment load in DVC which limited BURP and depth fines sampling suggests is affecting beneficial use support. Even if it is determined that there is not a sediment problem in DVC, any additional load from DVC would contribute to problems in Blackfoot River which is also listed for sediment.

Astaris feels the TMDL does not do an adequate job of explaining the methodology used to estimate streambank stability ratings in DVC. The streambank stability ratings were done as part of a survey spearheaded by the Soil Conservation Commission (Justin Krajewksi, Soil Conservation Commission, contact). The survey crews usually numbered three people with backgrounds or experience in fisheries, hydrology, soils, or botany. Streambank stability was visually estimated at a site according to Protocols for Classifying, Monitoring, and Evaluating Stream/Riparian Vegetation on Idaho Rangeland Streams (Cowley 1992). Site length might include the entire length of stream reach or, more likely, a shorter length from which data were extrapolated for the entire stream reach.

Astaris argues that the load reduction established for the section DVC-3 ‘seems inappropriate given the majority of suspended sediment in the upper part of the creek’. Because data indicate levels of sediment input are greater in upper DVC than lower DVC, there are likely still problems in lower DVC. Streambank stability data indicate this to be the case. Three targets (i.e., streambank stability, turbidity/total suspended sediment, and depth fines) were established to encompass targets for all sources of sediment input. In the case of upper Dry Valley Creek, data indicate high levels of sediment input while other data indicate high streambank stability. There could be several reasons for this apparent contradiction: more data are either needed to accurately describe the area or sediment input is originating from somewhere other than unstable streambanks. By recommending different targets we can better ensure sediment loads are reduced. Ultimately, however, the goal is to support beneficial uses.

Several streambank stability targets accounting for different morphological conditions should be established for DVC rather than a uniform 80%. The 80% or greater target is an average streambank stability over a reasonable length of DVC. For example, a 100 meter reach of stream may not meet the 80% target whereas a 1 kilometer reach which includes the 100 meter reach, may exceed the target. On the other hand, it cannot be expected that one landowner maintain conditions less than 80% and expect

other landowners to improve streambank stability on their land above the 80% target just so the overall average reaches 80%.

Astaris argues there are no data to indicate depth fines targets should apply to DVC unless DEQ has evidence of salmonid spawning. Evidence of salmonid spawning in Dry Valley Creek is limited. From Thurow's work, the lower 2.2 km of DVC would be listed as having salmonid spawning as a beneficial use.

There is concern that a target value be established for Maybe Canyon Creek and other tributaries to Dry Valley Creek. We have added an analysis and discussion of monitoring information from both Maybe Canyon and Chicken creeks. Based on these data we suggest the same targets for all streams below DV-7 as recommended for lower Dry Valley Creek (i.e., 14-day average not to exceed 4.61 NTU with a daily maximum of 20.15 NTU).

Success is measured through support of beneficial uses. The Beneficial Use Reconnaissance Program and Water Body Assessment Guidance are DEQ's primary, but not only, tools to help establish support of beneficial uses. We feel the recommended targets will help to achieve beneficial uses. Reduction in load from activities that contribute sediment into Dry Valley Creek watershed will be addressed as part of the implementation plan for the Blackfoot River subbasin.

The document fails to distinguish between background and human-made causes of water quality conditions in Dry Valley Creek Please see General Comments: Natural Conditions and Blackfoot River Watershed Council Response 6.

Astaris points out that beaver dams and a wetland mitigation area help to 'control' sediment in Dry Valley Creek and failure of these structures would result in sediment levels similar to what is observed above the mining activities as measured at DV-7. Such a scenario may well be true. However, beaver are a natural part of the watershed ecosystem in upper Blackfoot River as were wetlands which through mitigation Astaris has helped to restore. It does not make sense to set targets for a worse case scenario, we must set them based on our best information as to what needs done. Such data indicate that sediment/turbidity levels are lower near the mouth of Dry Valley Creek than above the mining activities.

3. The TMDL proposes to relate TSS to turbidity on a linear basis despite the fact that the Department has not established a high-quality linear relationship between TSS and turbidity.

We agree with Astaris that "determining the link between excess sediment and a measurable impairment to the designated use of the water body" is a challenge and we concur that we did not establish such a link in the TMDL plan. The TMDL process is striving for support of beneficial uses. If those uses can be supported at targets greater than those recommended, then the targets will be revised, accordingly. At the same time, it might be discovered that the recommended targets are not sufficient to support

beneficial uses and again the targets will be revised to the point where beneficial uses are supported.

Astaris points out that the relationship, although significant, between Total Suspended Solids (TSS) and turbidity was poor. These data were transformed to meet requirements of regression analysis. After consulting with mathematics professor, Dr. Rob Van Kirk, Idaho State University, we concluded that all regression requirements would be satisfied without transforming the data. The R^2 for non-transformed data improved to 0.84. Such a high degree of relationship increases our confidence in the recommended targets. As Astaris is currently collecting turbidity data, we would certainly welcome their help in verifying a better relationship between turbidity and total suspended solids.

We agree with Astaris that discovering a significant relationship between flow and sediment would be beneficial is establishing targets in Dry Valley Creek. Unfortunately, data did not show a significant relationship between flow and TSS at any site on Dry Valley Creek or when all sites were pooled. Below are the comparisons of non-transformed flow and Total Suspended Solids data from Dry Valley Creek.

Site	Count (n)	Correlation coefficient	*p*-value
DV-1	51	0.00	0.97
DV-2	18	0.14	0.57
DV-3	13	-0.06	0.86
DV-4	6	-0.18	0.73
DV-4a	6	0.44	0.38
DV-6	25	-0.15	0.48
DV-7	49	0.24	0.10
All	168	-0.10	0.21

Astaris questioned why turbidity was used as a surrogate for sediment. As we had discussed with Astaris when they applied for their 401 Water Quality Certification for Dry Valley Mine Expansion, Panels C & D, (issued 5 August 2000), turbidity is cheaper to monitor, an important consideration by Astaris at the time, and can be monitored on a continuous basis. With such a good relationship between TSS and turbidity, it only makes sense to measure turbidity. Astaris agreed to this as a condition in the 401 water quality certification.

Astaris argues that the targets have no flexibility in the event of upstream exceedances. As mentioned in the TMDL, all sites were used to establish the targets, 14-day average and 95th percentile. We assume that data collected by the consultants retained by Astaris adequately represent TSS and turbidity conditions in Dry Valley Creek. We feel that establishing the daily maximum at the 95th percentile value allows for ‘upsets’ upstream.

4. Water quality data appears to be used inconsistently, which has the effect of ignoring recent data, reaching some dubious conclusions, and focusing on companies that have collected data and applied BMPs.

Astaris is concerned about the use of more recent data in the TMDL and data gaps. Some point has to be chosen as the 'end point' otherwise it would be difficult to finish the TMDL as there would always be new data to incorporate. We admit there are data gaps and look forward to working with Astaris to help fill those gaps.

Astaris suggests that more information could be used in the TMDL from the Rich (1999) report. We have gone back and reviewed the Rich report and have added some language which we feel enhances the TMDL.

In terms of data gaps, we admit there are data gaps and wish there were more data to base a TMDL. However, we feel that data were sufficient to establish target loads keeping in mind that success of targets is based on support of beneficial uses.

Astaris is correct in their comment that it is likely that conditions have changed between 1975 and today, much of which can probably be attributed to the advent of the Conservation Reserve Program in the mid-1980s. However, data such as depth fines (Table 2.2-12) indicate that sediment is still a problem in the Blackfoot River subbasin.

Astaris wonders why the TMDL for Maybe Canyon Creek is being deferred and why the pollutants are listed as unknown. There exists information to indicate that metals exceed water quality standards in Maybe Canyon Creek and it is most likely that metals will be listed as pollutant of concern on the next 303(d) list to be published in 2002. In the meantime, as mentioned in the TMDL, it makes little sense for us to forge ahead and write a TMDL for Maybe Canyon Creek when there is an on-going effort to characterize the extent of the problem. We will be working with those folks to create a TMDL for Maybe Canyon Creek when their work is finished. We do not believe deferral of the Maybe Canyon Creek TMDL plan should prevent dealing with sediment concerns in Dry Valley Creek.

Astaris questions if streambank erosion is the major source of sediment input into streams. They suggest that mobilization of instream sediment may be a major source. We agree that instream mobilization may be a source of sediment into the stream. If it is the major source, then output from the streambed would be greater than input from non-streambed sources and we should see a reduction in the percent depth fines from core sampling. If non-streambed sources are greater than streambed sources, there would not be an overall reduction in depth fines. We believe the latter to be true, however, only monitoring of the streambed as part of the implementation plan will provide data needed to determine if spawning gravels and riffle areas are experiencing a decrease is fine sediment.

Astaris would like more information on the estimate of Lateral Recession Rate in Dry Valley Creek. The Idaho Soil Conservation Commission (SCC) coordinated the

evaluation. The contact for the SCC is Justin Krajewski located in the Pocatello office (phone number, 237-4628). Although DEQ is familiar with the procedure, Justin would be better able to answer questions regarding the protocol. Based upon Astaris comments, it would behoove us to consider re-examining streambank stability in Dry Valley Creek as part of the implementation plan.

Astaris points out that there are NPDES permits (e.g., stormwater, construction) in the Blackfoot River subbasin. The TMDL has been changed, accordingly.

Astaris is concerned that groups/companies be recognized for significant reductions in pollutants resulting from implementation of Best Management Practices and other activities. We would have welcomed additional wording to Section 2.3 Summary of Past and Present Pollution Control Efforts describing activities initiated by Astaris to reduce contribution of pollutants to Dry Valley Creek if Astaris would have made such a comment when reviewing the Subbasin Assessment and provided the appropriate language.

Shoshone-Bannock Tribes (Bret Holman, contact)

1. Allowable Loads for Pollutants

The Tribes are concerned that the TMDL does not discuss organics and flow alteration. As stated on Page 49, there was no indication that organics were a problem in upper Blackfoot River. Therefore, no further discussion was deemed necessary. As mentioned on Page 38, DEQ does not consider flow alteration a pollutant, despite the fact it is included in the 303(d) list. The Clean Water Act (CWA) specifically mentions that states retain authority over water and that ". . . nothing in this chapter (of the Clean Water Act) shall be construed to supersede or abrogate rights to quantities of water which have been established by any State." (U. S. Code, Title 33, Section 1251). The CWA goes on to provide a definition of pollutant including a list of materials and categories of materials which constitute a pollutant (U. S. Code, Title 33, Section 1362). This definition does not include alteration of water flow. In addition, several TMDLs (e.g., Lemhi and Portneuf rivers) have been written and approved by EPA without addressing flow alteration.

The Tribes point out that flow alteration can affect streambank stability. We agree. However, we uncovered no data to indicate the effects of flow alteration on streambank stability in the Blackfoot River subbasin. Please see Response 5 to Blackfoot River Watershed Council.

The Tribes would like to see use of the 80% streambank stability target clarified. The TMDL will be changed to make clear that the 80% streambank stability target does apply to the Blackfoot River.

The Tribes wonder why the TMDL chooses suspended sediment levels of 50 and 80 mg/l when EIFAC (1964) reported that fisheries were affected at suspended solids concentrations greater than 25 mg/l. Please see General Comments: Targets. Establishing a link between water column sediment and support of beneficial uses is difficult which is why an additional target for depth fines was established.

It is not clear to the Tribes whether the target for depth fines is 25% or 27%. The TMDL states on Page 64 that the depth fines target is not to exceed a 5-yr average of 25%. The last sentence in the first partial paragraph on Page 68 concludes with the sentence, "To include a margin of safety, the target was set at 25% for depth fines." We would welcome language that would make this clearer to the reader.

The Tribes question why DEQ set nutrient target levels at concentrations which have been known to precipitate algal blooms (based on reports cited in the TMDL). Please see General Comments: Targets.

2. Pollutant Loading and Concentrations

The Tribes argue that the loading analysis section, as stated by EPA, needs to estimate pollutant loadings and predict concentrations. We feel that the data were not sufficient to estimate loads in Blackfoot River nor did we feel that data from the tributaries could be extrapolated to the mainstem Blackfoot. The collection of additional data from mainstem sites would be beneficial as baseline information for the monitoring work of an implementation plan.

3. Sources and Controls

The Tribes point out that the TMDL does not include references to sources of pollutants or measures for controlling those sources. Sources were mentioned but only in a general sense (e.g., see Page 40) as little site-specific data were available identifying pollutant sources on particular streams. The implementation plan will expand the identification of sources as it recommends Best Management Practices to be implemented to reduce sources of pollutants. The implementation plan will also be the instrument through which measures for controlling pollutant sources will be established.

4. Other

The Tribes feel the paragraph describing the benefits and use of USGS data is confusing. The TMDL will be changed to clarify the discussion of USGS sites and data.

The Tribes wonder why DEQ says there has been a decrease in average concentration of nutrients when only total phosphorus has shown a significant change. The TMDL will be changed to indicate that nutrient concentrations have shown a declining trend but these decreases, other than total phosphorus, were not statistically significant.

The Tribes feel citation of state water quality standards under Sediment, Section 3.2.1, needs to be clearer. That section will be modified to make it more understandable.

The Tribes question why nitrogen and phosphorus were the only two nutrients addressed in the TMDL. Nitrogen and phosphorus are among many nutrients essential to plant growth. Phosphorus availability is generally believed to be a critical factor in eutrophication of waterbodies (Hem 1992). EPA (1999) in their *Protocol for Developing Nutrients TMDLs* noted that ". . . the absence of one of these nutrients [phosphorus and nitrogen] generally will restrict plant growth." Based on the above and other information, we concentrated our efforts on nitrogen and phosphorus input into Wolverine Creek and Blackfoot River.

Literature Cited

BLM (Bureau of Land Management), Forest Service, and USACE (U. S. Army Corps of Engineers). 1999. Draft Environmental Impact Statement: FMC - Dry Valley Mine, south extension project. Bureau of Land Management, Pocatello Resource Area, Pocatello, Idaho.

Cowley, E. R. 1992. Protocols for classifying, monitoring, and evaluating stream/riparian vegetation on Idaho rangeland streams. Idaho Department of Environmental Quality, Water Quality Monitoring Protocols – Report No. 8, Boise.

EIFAC (European Inland Fisheries Advisory Commission). 1964. Water quality criteria for European freshwater fish. Report on finely divided solids and inland fisheries. EIFAC (European Inland Fisheries Advisory Commission) Technical Paper 1.

EPA (Environmental Protection Agency). 1999. Protocol for developing nutrient TMDLs, 1st edition. EPA, Report EPA 841-B-99-007, Washington, D. C.

Hem, J. D. 1992. Study and interpretation of the chemical characteristics of natural water, 3rd edition. U. S. Geological Survey, Water-Supply Paper 2254, Washington, D. C.

Rich, A. A. 1999. FMC phosphate mine extension: fishery resources technical report. Report of A. A. Rich and Associates to FMC Corporation, Soda Springs, Idaho.

Thurow, R. 1980. Blackfoot River fisheries investigations. Idaho Department of Fish and Game, Job Performance Report, Project F-73-R-2, Boise.

Thurow, R. 1981. Blackfoot River fisheries investigations. Idaho Department of Fish and Game, Job Completion Report, Project F-73-R-3, Boise.

Comment Letters

(letterheads and signatures may have been lost when the following were scanned, copies of originals available from DEQ/Pocatello)

DAHO DEPARTMENT OF LANDS

EASTERN IDAHO AREA
3563 Ririe Hwy., Idaho Falls, Idaho 83401
Phone (208) 525-7167 Fax (208) 525-7178
Text Phone (800) 377-3529
E-mail: pbrown@idl.state.id.us
WINSTON WIGGINS - ACTING DIRECTOR

May 25, 2001

Mike Rowe

Idaho Department of Environmental Quality
224 South Arthur Avenue
Pocatello, IDn 83204

Dear Mike:

I have reviewed your draft Waterbody Assessment and Total Maximum Daily Load for the Blackfoot River Watershed and offer the following comments:

1) I believe that it should be made clear in the document that the Proper Functioning Condition Assessments cited to the Idaho Soil Conservation Commission (ISCC) were completed under the auspices of the Blackfoot River Watershed Council (BRWC) which, as you know, also serves as the Watershed Advisory Group (WAG) for the sub-basin. The BRWC arranged for access over private property and coordinated most of the fieldwork. Participants in the fieldwork included private property owners and personnel from the Idaho Soil Conservation Commission, the Idaho Department of Lands, the Idaho Department of Fish and Game, the Idaho Department of Environmental Quality, the Natural Resources Conservation Service and the Caribou National Forest. This is in no way intended to belittle the tremendous amount of time put in by ISCC employees both in the field and the office to complete and summarize the assessments, but I do feel you should make it clear that it was a team effort involving many individuals and agencies.

2) Section 2.3 summarizes past and present pollution control efforts. This department and it's grazing lessees have completed many range improvement projects within the sub-basin since 1987 aimed at improving riparian conditions through better livestock management. These projects have included:

    24.63 miles of pasture division fence to better regulate timing and duration of grazing.

- 12 new livestock water developments/improvements to improve livestock distribution. The water development projects included:
    - 5.62 miles of pipeline
    - 31 water troughs
    - 4 ponds

Many of these projects involved NRCS cost-share monies so there is almost certainly overlap between the improvements listed above and those already referenced in the document.

Thank you for the opportunity to review the draft Sub-basin Assessment for the Blackfoot River.

Sincerely,

Patrick A. Brown
Sr. Resource Manager - Range

PAB/pb

BLACKFOOT RIVER WATERSHED COUNCIL
COMMENTS
TO

BLACKFOOT RIVER TMDL
WATERBODY ASSESSMENT AND TOTAL MAXIMUM DAILY LOAD

The Blackfoot River Watershed Council (BRWC) consists of Federal, State and local agency personnel, public and private landowners and lessees of public lands. The BRWC is actively encouraging educational strategies understanding natural stream and water cycle health, historical and present impacts, and weather cycles affects within the watershed. The Council was formed to I)support, 2) monitor 3) and exchange knowledge to assure improved and/or continued health within the watershed among all interests. People have been encouraged to participate in the monitoring programs for a clear understanding of evaluation strategies and to share knowledge for everyone to have a more complete understanding of impacts and their effects on stream channel and soil types.
In reviewing the Blackfoot TMDL Waterbody Assessment the time element of such broad water and stream quality evaluation with limited money and staff within the DEQ & SCC (and inter-agency teams) is a tremendous challenge to this areas personnel. The BRWC applauds the amount of work that has been done to date. Inclusion of the PFC-assessment compliments the nutrient, TSS and BURP assessments which gives a more thorough explanation of our watersheds health. This orchestration of the assessment protocols in the report is easily read and allows a clearer overall understanding by general readers. Thank you for making this document readable for public comment. The BRWC compliments DEQ and SCC for this well written assessment.

The assessment is limiting in strategies of comparative monitoring.

- Basic yearly weather patterns
- Collecting times/points are inconsistent which does not tie it to impact assessment.
- Historical impacts
- Segments of activities meant to restore stream quality.
- 80% streambank stability reduction *through the watershed* unattainable.

Assessments specifics of water quality and beneficial use without it relating to weather, dates of/and ramping from reservoir, resource use and local activities of riparian or upland improvement sterilizes the report. To understand "natural' vs "human" impacts other information must be included. Local Historical Societies, Soil Conservation Districts and schools would be avenues to generate this information. To ignore the *whole* we are placated to addresses perceived or most easily addressed impacts. This will not secure ongoing long term improvement of stream and water quality. It **will** generate misconceptions, finger pointing and dissension! It also gives rise to ongoing legal battles.

Weather Patterns:
Table D- I Shows monitoring data from 1982 & 1989 when the average precipitation was 17.72 inches and 9.53 inches respectively which may make a significant difference in analyzing differences of water quality.

Table E-1 Reid Bridge monitoring in 1987, precipitation was high through the months of May and July. Monitoring was done through May but ended the first week in July. Flow varied by 75cfs between those two months. Without completed data correlation of impact to water quality is at best, a guess.

In the same table Dry Valley,- Lower includes monitoring in 1990 from May through Oct., 1991 -

June through Sept., 1992-June through July, 1993-June through Oct., 1994- May through July, 1995- May through Nov., 1996- May through Nov.. It is difficult to make determinations when monitoring times are erratic.

Historical Impacts:

Early Activities;

- Beaver trapping began in 1817 and by the early 1900's a ban that continued for twenty years was put on beaver trapping because of severe depletion. This condition had to have had a severe effect on stream bank stability & water quality in the drainage.
- From 1858 to 1912 the Oregon and Lander Trails followed the Blackfoot River and rounded the reservoir. In the year of 1859, 3,000 wagons with 13,000 people and 50,000 head of livestock used the Lander trail.
- Large cattle & sheep herds from surrounding states would graze through the open (vacant) spaces in the Blackfoot River Watershed..
- Early settlers living through the hills located near springs and streams with their livestock utilizing all the grass they could before the "big herds" came through. After the large herds migrated through the settlers put their animals back out on any grass that was still standing and watered from the same streams. This was extreme continuous grazing and stream bank impact which also had an early and lasting effect on the watershed's ecosystem and water quality health. To what degree have these impacts been identified and rectified?
- Settlers also made a living by mowing the wild grass meadows, cutting trees for their small sawmills, grazing livestock on public range, dry land farming, building diversion ditches for irrigated farming and subsistence fishing and hunting.
- Willows were cut, burned or sprayed to make more meadow for utilization and to rid these area of predators cover.

We cannot know the severity of these early impacts because only casual comment is available to determine changes made. How much of these impacts are still a part of our watershed health and is still part of the bed-load of sediment in our streams?

Rangeland Management;

- Public lands monitoring was originally concerned with the uplands and the amount of grass taken by livestock.
- The last two decades growing concern focused on the condition of riparian areas.
- Public lands agencies have limited time to monitor conditions consistently enough to fairly determine degree of impacts from different activities and management protocols.
- Riparian monitoring is still a new science evolving to something complete and understandable enough for general use.

  Management Impacts;

  - Grazing management improvements are just beginning.
  - Controlled burn activities are stifled which supports damaging effects of wildfires
  - Road building and maintenance does not address impacts to water quality.
  - ORV's are more prevalent with no enforced policy of use.
  - Recreational camping has no enforced policy of use.

To expect a target improvement of 80% stream bank stability and phosphorus levels at 0.0mg/l in ten years is confounding.

Acknowledgment of Restoration Activities:

With our societies social change from industrial to the environmental age knowledge is rapidly growing toward a sustainable or better improved care-taking attitude. Many activities are happening in the Blackfoot River Watershed to restore stream segments and uplands. The data collecting times do not address these positive steps and therefor is extremely lacking in supporting improvements to water quality. The impacts to the cultural and economic resources are not being addressed. This too can be done with established organizations and agencies. To ignore it is simply self defeating.

To expect support for evaluations and target loads without giving evaluation data showing effectiveness (or not) of these restoration activities is ignoring local commitment and not allowing a data base of most useable restoration technics.

The target reduction of stream bank stability are impossible below the reservoir which loads the percentage in other areas making the target extreme and exasperating to agricultural people who are overwhelmed with acute weather and market conditions. Establishing target water quality and management protocol without addressing the afore mentioned points is inviting resistance that stifles the process of change toward improved water quality. To build a consensus of understanding and pride in stream and water cycle health in the "community" of this watershed will build a longer term of success in this endeavor.

The Blackfoot River Watershed Council ask that extended time and support be given to allow this extra collection of information to be included in an all encompassing management plan.

Mr. Mike Rowe June 4,2001
Department of Environmental Quality
244 S. Arthur
Pocatello, ID 83204

Dear Mike;

I have reviewed the Blackfoot River TMDL Waterbody Assessment and Total Maximum Daily Load report and have some concerns, questions and suggestions.

On page 83 you state that "80% streambank stability represents conditions found in Idaho wilderness areas." The Clean Water Act states that waters will be " fishable and swimable" How did we get from swimable and fishable to wilderness conditions ?

However, I understand what 80% streambank stability is. It is possible to achieve this goal on tributary streams. However, on the stretch of the Blackfoot River after it leaves the canyon, this standard is impossible to meet. The only way this could be done is to stop using the Reservation Canal and give the river 100 years to heal itself. This will not happen as treaty rights to water take precedence over the Clean Water Act. The flow regulation in this area has downcut the channel 10 to 15 feet.All other uses have a minimal impact compared to this.

The standard will also be impossible to meet on the stretch of the Blackfoot River from the reservoir to where it comes out of the canyon. This stretch is not as badly affected as the lower reach, but still has problems with flow regulation. Some areas are quite stable due to a rock base, but those areas with a silt loam soil base are unstable due to flow regulation.

Putting an impossible standard in this document puts all users of this stream and all landowners along the stream [even if they are not a cause of any water pollution] in a very precarious position. I strongly recommend that you change this document to provide a reasonable goal for the Blackfoot River below the reservoir.

I also have some questions about the other standards. The standard on page 83 states "All 303 [d] listed streams which identify sediment as a pollutant are expected to meet the targets for subsurface strearnbed sediment - fines less than 6.25 mm not to exceed a 5 year mean of greater than 25% by volume in riffles". In the document you show no data of present conditions. I have no idea of where we stand at the present time. Do you have any monitoring data on fines on any streams? Is it possible to meet this standard on streams with a loam soil base? If we find data that shows there is an excess of fines in the riffles, how long does it take the stream to clean itself of these fine after the sediment sources have been removed ? These questions need to be answered before we accept this standard.

I also have a question about the phosphorus standard on a stream which has a natural source of phosphorus. This is one of the few places in the world where phosphorus is mined. What is the background phosphorus in the streams in this watershed?

Thank you for the opportunity to make comments on this document. Please provide answers to the questions even if you do not use the recommendation.

Sincerely,

ASTARIS

Quality Products. Exceptional Response.

AsTARiS LLC
2275 Dry Valley Road
PO. Box 839
Soda Springs, Idaho 83276
Phone 208-S47-2700
Fax Fax 208-547-2732

June 5, 2001

Mr. Lynn Van Every
DEQ Pocatello Regional Office
224 S. Arthur
Pocatello, ID 83204

Re: Astaris Blackfbot River Subbasin Assessment and TMDL and Related Matters

Dear Lynn:

I am attaching Astaris comments on the "Blackfoot River TMDL, Waterbody Assessment and Total Maximum Daily Load" prepared by the Department. As we considered the Subbasin Assessment and proposed TMDL, we revisited a number of issues and concerns that we've talked with you about many times in the past and likely will have occasion to visit with you about many times in the future.

Our review of the historic data, the area-wide hydrology, recent water quality monitoring data submitted to the Department last month and mentioned to you during our meeting on May 18, and the proven positive impacts Astaris' operations are having on local receiving waters leads us to conclude that the Dry Valley Creek segments listed as 303(d) impaired should not be so listed. At a minimum, the turbidity limits used in the 401 certification and in the proposed TMDL should be revised based on a consistent methodology, and that the designated beneficial use of Dry Valley Creek as "cold water biota" is inappropriate.

I propose that we schedule a time to meet with you and other appropriate Department staff to discuss current water quality limitations, beneficial use designations of local stream segments, delisting of some of the segments from the Section 303(d) list, and related water quality issues. It likely makes sense for you and me to develop an outline of issues worth bringing to the table. We know we share a common goal with the Department of identifying potential problems with current data or limitations prospectively rather than waiting until those problems become more pressing and limit options.

I look forward to hearing from you.

Very truly yours,

Gary R. Resh
Mine
Manager
Dry Valley Mine

ASTARIS

Quality Products. Exceptional Response.

ASTARIS LLC
2275 Dry Valley Road
P.O. Box 839
Soda Springs, Idaho 83276
Phone 208-547-2700
Fax Fax 208-547-2732

June 5, 2001

Mr. Lynn Van Every
DEQ Pocatello Regional Office
224 S. Arthur
Pocatello, ID 83204

Re: "Blackfoot River TMDL, Waterbody Assessment and Total Maximum Daily Load"

Dear Mr. Van Every:

Astaris Production LLC submits these comments on the "Blackfoot River TMDL, Waterbody Assessment and Total Maximum Daily Load" prepared by the Department of Environmental Quality and dated April 2001.

As a company operating within the Blackfoot River Subbasin, Astaris has significant knowledge and concerns about area water quality. Astaris implements state-of-the-art best management practices and meets stringent surface and ground water limitations to protect local water quality. Astaris appreciates this opportunity to review data included in the Blackfoot River Subbasin Assessment and to offer its suggestions concerning the proposed TMDL being developed by the Department.

Based on its experience working with BMPs and water quality limitations within the Subbasin, Astaris has a number of concerns about the Blackfoot River Subbasin Assessment and TMDL.

- The TMDL inaccurately applies cold water biota to identified ephemeral and intermittent stream segments;
- The Assessment and proposed TMDL use several inconsistent methods to determine target levels for sediment (via TSS/turbidity measurements);
- The TMDL proposes to relate TSS to turbidity on a linear basis despite the fact that the Department has not established a high-quality linear relationship between TSS and turbidity; and
- Water quality data appears to be used inconsistently, which has the effect of ignoring recent data, reaching some dubious conclusions, and focusing on companies that have collected data and applied BMPS.

Each of these concerns, as well as other questions or comments, is discussed below.

1. **The TMDL inaccurately applies cold water biota to identified ephemeral and intermittent stream segments**

The application of cold water biota criteria to Dry Valley Creek is not justified based on the fact that a significant portion of Dry Valley Creek is not a perennial stream. The Dry Valley, Idaho USGS Quadrangle delineates most of Dry Valley Creek in Section 16, N8S R44E (middle Dry Valley Creek) as intermittent. Using DEQ's definition of "intermittent waters" at IDAPA 5 8.01.02 Section 003.5 1, Dry Valley creek at sample locations DV-2 (lower Dry Valley Creek), DV-6 (middle Dry Valley Creek) and DV-7 (upper Dry Valley Creek) is intermittent (Table C- I Final EIS Dry Valley Mine - South Extension Project, BLM and USFS, June 2000). DV-2, DV-6 and DV-7 have reported no flow for one month or more in seven, nine and five years respectively, out of the last I I years. Even DV- I (lowest Dry Valley Creek) has reported no flow during the summer in three out of the last I I years. These data clearly support the classification of the majority of Dry Valley Creek as intermittent, including the two locations where sediment/turbidity standards are proposed (i.e., DV-2 and DV-6).

For example, using information from the Dry Valley Mine South Extension Project Final EIS Table C-1, the following summarizes "dry" or "no flow" dates:

> Station DV-2: 1991 - July & August; 1992 - July, August, September; 1993 - August, September, October; 1994 - May through October; 1995 - July through November; 1996 - July, August, September; no measurements in 1998 & 1999.
>
> Station DV-6: 1989 - September, October, November; 1990 - July, August, October; 1991 - July, August, September; 1992 - July, August, September; 1993 - August, September, October; 1994 - May through October; 1995 - July through November; 1996 - July through November; 1997 - November.

DEQ's Water Body Assessment Guidance (DEQ, 2000) clearly states that use designations only apply to perennial portions of waters (Section 5.4. 1) ("Unless broken out separately in the tables, use designations listed in the tables as the standards for a WBID unit apply to all perennial segments of waters included within that particular WBID unit.").

Under Idaho water quality standards, Dry Valley Creek is an undesignated surface water (see IDAPA 58.01.02.150.09.). Prior to designation, undesignated waters, such as Dry Valley Creek, are to be protected for beneficial uses, which include recreational uses and protection and propagation of fish, shellfish, and wildlife "wherever attainable." IDAPA

58.01.02.101.01. Section 101.01 sets forth a process by which undesignated surface waters may be re-examined as to the appropriate beneficial use. Specifically, Section 101.0l.b provides:

> "During the review of any new or existing activity on an undesignated water, the Department may examine all relevant data or may require the gathering of relevant data on existing uses; pending determination in Section 101.0l.c. existing activities will be allowed to continue."

Section 101.01.c states:

> "If, after review and public notice of relevant data, it is determined that beneficial uses in addition to or other than cold water aquatic life and primary or secondary contact recreation are appropriate, then the Department will:
>
> i. Complete the review and compliance determination of the activity in context with the new information on beneficial uses, and
>
> ii. Initiate rulemaking necessary to designate the undesignated water, including providing all necessary data and information to support the proposed designation."

Astaris hereby requests that the use attainability analysis process described in Section 101 be undertaken with respect to Dry Valley Creek as soon as possible. Astaris looks forward to providing data that will demonstrate that “cold water biota” is neither an existing use, nor is it an attainable use on Dry Valley Creek, due to naturally-occurring flow limitations and other factors.

Instead of demonstrating the justification for Dry Valley Creek's being included on the 303(d) list and providing the basis for the proposed TMDL, the data presented in Tables D- I and G- I instead provide compelling arguments against the listing of the reach below site DV-7.

For site DV- 1, which is at the mouth of Dry Valley Creek, there were 65 data points for TSS presented. These points cover the period from 1977 to 1999. Of these 65 points, only three exceed the 50 mg/L level that is deemed harmful to cold water fish for a 5-day exposure. This is approximately one occurrence every seven years, and the highest level in the data was 66.2 mg/L, which is far short of the 80 mg/L level above which there may be lethal or paralethal effects on the fish community. The mean of these 65 points is 12.74 mg/L, which is substantially lower than the 25 mg/L level, below which harmful effects to fisheries are deemed not to occur. The mean TSS values for sites DV-2, DV-3,

DV-4AandDV-4werelowerthanthevalueforDV-1. Simplyput,thejustificationfor listing Dry Valley Creek and imposing the allocations that are set forth is based totally on subjective and qualitative judgments, while the objective evidence argues in the opposite direction.

According to the EPA's "Protocol for Developing Sediment TMDLS" (First Edition, October 1999), for intermittent or ephemeral streams, TSS or turbidity indicators are only sometimes useful or not very useful for TMDL development. (USEPA (1999), Table 4-13, page 4-20) The Blackfoot River TMDL report states that cold water biota is the only beneficial use impaired in Dry Valley Creek. According to the USEPA (1999), where cold water aquatic habitat concerns prevail, TSS or turbidity indicators might be useful as secondary indicators to complement streambed and geomorphic indicators, to monitor short-term sediment impacts associated with specific areas, and to estimate sediment yield. (USEPA (I 999), page 4-6.)

If lower Dry Valley Creek has a mean turbidity of 4.6 NTU and TSS of 18.2 mg/L, it does not appear that these data support having this stream segment listed as impaired for sediment. What information was used by state and/or federal agencies to initially place Dry Valley Creek on the 303(d) list for sediment? In Astaris' view, lower Dry Valley Creek should be removed from the 303(d) list due to low sediment concentrations and the ephemeral/interinittent flow characteristics.

2. The Assessment and Broposed TMDL use several inconsistent methods to determine target levels for sediment (via TSS/turbidi!y measurements)

It would be prudent to establish clear and consistent approaches to establishing target parameters and measuring the success of the parameters. In addition, there should be acknowledgement that, for Dry Valley Creek, several tributaries to the Creek drain areas with various landowners and types of activities that can contribute sediment to the Creek.

The Assessment and proposed TMDL fail to mention or to separate background concentrations from man-made impacts, especially with respect to sediment and nutrients. This makes it difficult to enforce pollution control measures and observe effects on load reduction. The region is characterized by "erodible" soil, which results in natural sedimentation, especially during periods of significant runoff. The Department acknowledges this issue with respect to Dry Valley Creek in Section 3.2.1 of the Proposed TMDL document with the following statement, which appears on page 65:

> "It is unknown whether at certain times of the year (e.g., spring runoff or intense summer rainstorms) Dry Valley Creek may have naturally exceeded these concentrations of 50 and 80 mg/l for durations of greater than 5 days."

The failure to distinguish background conditions from man-made impacts needlessly complicates non-point source and background source issues. It also may be prudent to separate significantly different potential sources (e.g., agriculture, mining, logging, road building, etc.). Most fundamentally, Astaris does not concur with the apparent working assumption of the Assessment that water quality "problems" result from "natural" landslide or beaver or geologic conditions. Specifically,

> Section 2. 1. Astaris does not understand how a background sediment yield can be established for comparison with current levels of sediment and TMDL sediment goals if the soils in the basin below Wolverine Creek to Miner Creek are highly erodible;
>
> Section 2. 1. 1, third to last paragraph. Astaris cannot locate within the Assessment the monitoring data collected for mining baseline and abandoned mine land evaluation purposes. Astaris presumes additional data exists. As presented in this document, the provided description is minimal and incomplete.
>
> Table 2.1-6. Please define the values for the rating 0-25, 25-50.
>
> Table2.1-10. Land use coverage reference is 30 years old; this has likely changed since that time.

At a minimum, if the Assessment and proposed TMDL are to be meaningful, natural background levels for sediment, phosphorus, and nitrogen must be accurately established.

Astaris has a number of concerns related to not characterizing or mischaracterizing Dry Valley Creek, which is the most significant receiving water near Astaris' Dry Valley Mine operations. For example, based on fisheries studies referenced in the Blackfoot River TMDL report, target seasonal TSS concentrations of 50 and 80 mg/L TSS (equivalent to 24.23 and 40.55 NTU, respectively) are recommended as target levels above which there may be "lethal or paralethal effects on the fish community in Dry Valley Creek." First, there is no major fish community in Dry Valley Creek (Rich, 1999). Secondly, if cold water biota were a beneficial use of Dry Valley Creek, then why would lower Dry Valley Creek not have the same target sediment levels of 50 and 80 mg/L? Instead, target sediment levels in lower Dry Valley Creek are based on mean background concentrations. There is no consistency here in how the target sediment levels are established for upper and lower Dry Valley Creek. In addition, the entire remaining Blackfoot River Subbasin is subject to the following sediment target level: turbidity shall not exceed background by greater than 50 NTU instantaneously or greater than 25 NTU for more than 10 consecutive days. It is evident, therefore, that three

different methods of establishing target turbidity standards are used in the Blackfoot River TMDL report. There is no logic as to why turbidity standards for lower Dry Valley Creek are much more stringent (i.e., background) than upper Dry Valley Creek and all other drainages in the Blackfoot River Subbasin. The Idaho DEQ should provide rationale for this sediment TMDL development.

It is not clear from the stream bank stability data provided in Table 3.2-10 why reach DVC-3 on lower Dry Valley Creek is the only reach with less than 80% stream bank stability, when most of the suspended sediment comes from upper Dry Valley Creek. The target load reduction of 331.8 tons/year for Dry Valley Creek reach DVC-3 also seems inappropriate given the majority of suspended sediment in the upper part of the creek. The methodology used to establish existing stream bank stability percentages for Dry Valley Creek should be explained. Additionally, instead of using a single target stream bank stability of 80%, the Department should consider establishing several target values for varying morphological conditions, because stability varies naturally due to morphology. Finally the depth fines target values should not apply to Dry Valley Creek, unless the Department has evidence demonstrating that there are reaches where salmonid spawning occurs.

If target standards for sediment are developed for lower and upper Dry Valley Creek, it seems logical that a target value would also be established for Maybe Canyon Creek, because this creek drains an area of disturbance from mining-related activities, road building, and grazing.

Astaris urges the Department to establish a clear and consistent approach to establishing target parameters and measuring the success of the parameters. Astaris further encourages the Department to address the several tributaries to Dry Valley Creek and the various landowners and types of activities that can contribute sediment to the Creek.

The failure of the Assessment and proposed TMDL to distinguish background and man-made causes of water quality conditions leads the TMDL to inequitable and incorrect conclusions about what can or should be done within the basin. Lower Dry Valley Creek has lower turbidity and TSS levels than upper Dry Valley Creek primarily due to beaver dams and a wetland mitigation area constructed by Astaris a number of years ago. If these "structures" were removed, it is likely that sediment concentrations in lower Dry Valley Creek would be similar to levels in the upper part of the stream. As such, it does not seem reasonable to have sediment target levels in lower Dry Valley Creek that are much lower than upper Dry Valley Creek.

3. The TMDL proposes to relate TSS to turbidity on a linear basis despite the fact that the Department has not established a high-gualily lines relationship between TSS and turbidity

A challenge with any TMDL process for sediment is determining the link between excess sediment and a measurable impairment to the designated use of the water body. For Dry Valley Creek, the TMDL report does not appear to develop this link. Sediment is a natural part of all waterbody environments, and it can be difficult to determine whether too much or too little mass loading is expected to occur in the future and how sediment load compares to natural or background conditions. See EPA's "Protocol for Developing Sediment TMDLS" (First Edition, October 1999). A significant level of uncertainty is associated with sediment delivery, storage, and transport estimates (USEPA 1999).

An essential, but not established, tenet of the target setting portion of the proposed TN4DL is the ability to relate total suspended solids (for which criteria are available) to turbidity. Yet, the plot of turbidity versus TSS shows a poor linear regression, particularly in the area of the proposed TMDL standard. The results indicate that the two may be related (low p value) but that the relationship is not necessarily linear.

Sediment yield varies significantly at different spatial and temporal scales. Therefore, a variation on the use of absolute suspended sediment concentrations (turbidity and TSS) as a direct TMDL indicator is the use of dynamic functions relating suspended sediment load or concentrations to waterbody fiow. This approach acknowledges the fact that sediment loading often varies substantially as a function of fiow and better reflects system dynamics than static indicators (USEPA 1999). For example, targets can be based on the slope of a regression curve from a plot of flow against total suspended sediment or turbidity.

With specific reference to Dry Valley Creek, the proposed TMDL uses turbidity as a surrogate for total suspended solids (TSS). The document does not explain why turbidity was chosen as a surrogate, and Astaris questions this action, because TSS is easily measurable, and, in particular, because of the poor correlation between the two parameters at low values. For example, there are eight sampling events in the data presented in Tables D- I and G- 1, where, at site DV- 1, the turbidity value was higher than 4.6 ntu, while the corresponding TSS value was less than 12 mg/L. Given the draconian measures that can be brought to bear on a discharger who fails to comply with an applicable TMDL, the use of a surrogate that doesn't correlate well with the target pollutant, (particularly in the range of the limit) is simply not good public policy.

The proposed TMDL sets forth limits for the Upper (above mining activities) and Lower segments of Dry Valley Creek. These limits are absolute (i.e., there is no provision for

adjustments in the event of background [upstream) exceedences). Additionally, the limits in the upstream segment are numerically higher than those for the lower segment. The data set indicates that the upstream values are clearly higher across the board than those downstream, and Astaris believes that the final TMDL should provide for a background adjustment, if only for short periods, so that upstream events over which Astaris may have no control do not cause violations within the receiving waters affected by Astaris' operations. See, for example, Idaho Water Quality Standards at IDAPA 58.01.02.250.02(a) (Surface Water Quality Criteria For Aquatic Life Use Designations Cold Water Criteria).

4. Water gualily data appears to be used inconsistently, which has the effect of ignoring recent data, reaching some dubious conclusions, and focusinly on companies that have collected data and applied BMPs

Astaris is very concerned about the inconsistent and perhaps flawed use of data when more recent or compelling data is available and about the election to not consider "other existing and readily available water quality-related data and information," 40 C.F.R. § 130.7(b)(5), particularly in the case of sediment data from Maybe Canyon Creek for which such data and information exists. Astaris also is concerned about data gaps, which suggest that some of the conclusions being drawn about turbidity, total suspended solids, or sedimentation address receiving waters that are not flowing or are intermittent.

In general, the Assessment and proposed TMDL rely on subjective, qualitative analysis to support broad based suppositions regarding impairment of water resources in the Blackfoot River Subbasin. Available data exist that were not used in the Assessment and proposed TMDL. For example, information in the Dry Valley Mine South Extension Project Final EIS, including studies by A.A. Rich, could have been more extensively used in the TMDL report. (The A.A. Rich & Associates' Fishery Resources Technical Report, FMC Phosphate Mine Expansion, April 23, 1999, contains considerable survey information on macroinvertebrates, substrate material, fishery resources, physical habitat conditions, and water quality for Dry Valley Creek, Maybe Creek, and a portion of the Blackfoot River. Some of this information was used in the TMDL report, but a considerable amount was not used.) In specific instances, the Assessment and proposed TMDL use poor quality data. For example,

> Section 2.2.4. The analysis of existing water quality data indicates that numerous data gaps exist. This is problematic with respect to establishing TMDLS.
>
> Section 2.2.4, Sediment - Summary Analysis. A large portion of the description in this section is based on 1975 data, which was during poor agricultural practices (e.g., prior to inception of no till farming or use of CRP limitations).

In other instances, the Assessment and proposed TMDL fail to use available data. For example,

> Section 2.2.4, Metals (page 50). If TMDL development for Maybe Canyon Creek is deferred, should not all water bodies below this source also be deferred? It is not clear why the Maybe Canyon drainage is excluded temporarily from TMDL development when studies in the area seem to have resulted in considerable data. Table 2.2-1 describes pollutants in Maybe Creek as unknown.

The Assessment and proposed TMDL make assertions based on what appears to be inconsistent and perhaps flawed use of existing data. For example, inclusion of the lateral migration rate is predicated on the idea that stream bank erosion is a major source of sediment input into streams in the Blackfoot River Subbasin. Indeed, the stream bank lateral recession rates for one reach of Dry Valley Creek are stated to be 0.268 ft/yr. While the text suggests that stream bank erosion is a major source of sediment is a fact, it is not clear that this is true. In-stream sediment sources (mobilization of existing sediment sources within the stream margins) may provide more sediment to the system than bank erosion. Nevertheless, the Assessment and proposed TMDL attempt to achieve the sediment target using only the lateral migration rate. Specifically,

> Section 3.2, Table 3.2-8, Table 3.2-10, Strearnbanks. The document presents data indicating that the lateral recession on Dry Valley Creek in the reach above DV-3 is 0.268 feet per year, but it does not state over what time period, by which protocol, or by whom the data were gathered; only the date 1998 appears. In order to assess the recession rate, it would appear that an investigator would need measurements from at least two visits. Given the importance of this issue, Astaris would like to examine the data, and would appreciate an opportunity to discuss the process with the team who investigated bank stability on Dry Valley Creek. .

As a result of this analysis, the proposed TMDL would require a load reduction of 331.8 tons per year on Dry Valley Creek - all from the section that is I 00% on private land. The method by which " load reduction would be measured should be discussed.

Additionally, Section 2.2 (page 23) states that there are no NPDES permits on listed water bodies in the Blackfoot River Subbasin. This is incorrect. A number of point sources within the Subbasin discharge storm water pursuant to the EPA Construction General Permit, Multi-Sector General Permit, or other general permits for storm water discharges.

Astaris is concerned that as a result of developing and submitting to the Department water quality data, and of designing and implementing BMPS, companies, such as Astaris, are inadvertently subjected to stringent load limits without recognizing the significant reductions that have already occurred and without acknowledging the conditions that would otherwise pertain in those segments of the receiving waters without application of the BMPS.

Conclusion

Astaris appreciates this opportunity to comment on the "Blackfoot River TMDL, Waterbody Assessment and Total Maximum Daily Load." As a company operating within the Blackfoot River Subbasin, and implementing state-of-the-art best management practices and meeting stringent surface and ground water limitations to protect local water quality, Astaris has significant knowledge and concerns about area water quality.

Astaris looks forward to an opportunity to discuss these comments or related issues with the Department. Please contact us if you have any questions regarding our comments on the Blackfoot River Subbasin Assessment or proposed TMDL.

Very truly yours,

Gary R. Resh
Mine Manager
Dry Valley Mine

THE SHOSHONE-BANNOCK TRIBES

FORT HALL INDIAN RESERVATION
PHONE (208) 478-3901
FAX (208) 478-3909

LAND USE DEPARTMENT
WATER QUALITY PROGRAM
P.0. BOX 306
FORT HALL, IDAHO 83203

September 12, 2001

Idaho Department of Environmental Quality
Pocatello Regional Office
224 South Arthur Avenue
Pocatello, ID 83204

Re: Blackfoot River TMDL Comments

Dear Mike Rowe:

Thank you for the opportunity to comment on the proposed TMDL for the Blackfoot River. The Water Quality Program of the Shoshone-Bannock Tribes submits the following comments for your consideration. It is our desire to lend support in the difficult task of constructing a suitable TMDL for the Blackfoot River.

If you have any questions regarding The Shoshone-Bannock Tribes Water Quality Program's comments please contact either Bret Holman or Lisa Safford

Sincerely,

Bret Holman
Water Quality Program

Cc: LS

THE SHOSHONE-BANNOCK TRIBES

FORT HALL INDIAN RESERVATION
PHONE (208) 478-3901
FAX (208) 478-3909
FORT HALL, IDAHO 832031.

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Introduction

The Shoshone-Bannock Tribes Water Quality Program provides these comments for the proposed TMDL (Total Maximum Daily Load) of the Blackfoot River. The Water Quality Program recognizes the difficulty in writing this TMDL with the overall lack of information and baselines available to present a clear picture of the subbasin.

In the EPA's TMDL guidance it says, "The objective of a TMDL is to allocate allowable loads among different pollutant sources so that the appropriate control actions can be taken and water quality standards achieved. The TMDL provides an estimate of pollutant loadings from all sources and predicts the resulting pollutant concentrations. The TMDL determines the allowable loads and provides the basis for establishing or modifying controls on pollutant sources." The proposed TMDL for the Blackfoot River does not take into consideration many of the points discussed in this guidance.

II. **Allowable Loads For Pollutants**

On page 62, in the first paragraph it says, the 303(d) lists pollutants of the streams in the Blackfoot River subbasin as sediment, nutrients, organics, and flow alteration. The proposed TMDL discuses sediments and nutrients, but never gives any information on organics or flow alteration. In fact, in the next paragraph on page 62, it states that Idaho does not consider flow alteration as a pollutant. If it is not considered as a pollutant, **why does the 303(d) list it as a pollutant and what is the DEQ's explanation for not considering** it **a pollutant?**

On page 67 under streambanks, it says, "it appears that streambanks are a substantial source of sediment into streams, although mass wasting has also been identified." However, flow alteration is not considered a pollutant by the DEQ. **What happens to the streambank when the flow is altered?**

On page 67, in the third paragraph, it says that a streambank stability of 80% or better is recommended. Then in the next sentence it states, " This surrogate measure was the target used in the South Steens Total Maximum Daily Load. **However, it never makes it clear that this is the target for the Blackfoot River as well.**

FORT HALL INDIAN RESERVATION
PHONE (208) 478-3901
FAX (208) 478-3909
FORT HALL, IDAHO 83203

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The first paragraph on page 67 sets target turbidities of suspended sediment at seasonal levels of 50 and 80 mg/I. This standard was adopted from a 1964 European standard, even when a 1996 study by Newcombe and Jensen of the Dry Valley Creek on pages 65 and 66, showed paralethal to lethal effects on the fish community at these levels. **What** are **the DF-Q's justifications for these limits, when the European Inland Fisheries Advisory Commission** in **their 1964 review stated that a level of 25 mg/l or less was best for fisheries?**

On page 67 in the last paragraph it states, "in granitic, volcanic, and sedimentary drainages, streams in good, fair, and poor conditions will have <25%, 25-30%, and >30% fines, respectively." Yet the DEQ does not make it clear whether they have set the target for depth fines at 25% or 27% according to the first paragraph on page 68. **The target for depth fines needs to be clearly stated.**

DEQ gives target levels of 0.3 mg/i for nitrogen and 0. 1 mg/i for phosphorus, however, on page 90 in the second and fourth paragraphs, Bothwell's 1989 study shows that algal blooms could occur at inorganic nitrogen concentrations of about 0.25 mg/I. The study also showed that phosphorus concentrations greater than 0.05 mg/i were no longer a limiting factor. **What is DEQ"s reasoning for setting higher target levels?**

Ill. Pollutant Loading and Concentrations

The loading analysis for sediment and nutrients, starting on pages 68 and 91 respectively, never really estimate the load of the pollutants in the Blackfoot River itself. The section appears to explain only the allowable loads or targets set in the previous sections. It gave examples of a couple of tributaries and their loads; however, it never extrapolated on the assumed condition of the Blackfoot itself. **The loading analysis section, as stated by the EPA, needs to estimate pollutant loadings and predict concentrations.**

IV. Sources and Controls

In the EPA's TMDL guidance it states, "TMDLs can and should be used, however, to consider the effect of all activities or processes that cause or

FORT HALL INDIAN RESERVATION
PHONE (208) 478-3901
FAX (208) 478-3909
FORT HALL, IDAHO 83203

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contribute to the water quality-limited conditions of a waterbody. Activities may relate to thermal changes, flow changes, sedimentation, and other impacts on the aquatic environment. Control measures to implement TMDLS, therefore, are not limited to NPDES authorities but should also be based on State and local authorities and actions to reduce nonpoint source pollution."

Nowhere in the proposed TMDL are there any references to sources of pollutants or any measures for controlling those sources. For example, on page 91 in the last paragraph states, "Jones Creek is a major contributor of nutrients into Wolverine Creek"; however, it fails to say where the nutrients in Jones Creek are originating. Also on page 67, in reference to streambank stability as a source of sediment pollution, the TMDL doesn't address what is causing this problem and what is going to be done to correct or counteract the problem. **Sources and control measures should be addressed by the TMDL to be able to properly monitor and control loadings.**

V. Other

On page 61, section 2.3.1, Water Quality Improvement, there are two different places that are contradictory. The first contradiction is in the second paragraph were it states, "The best data for comparison is from the USGS surface stations. The advantage of USGS data is that the information is collected in the same way on a relatively consistent basis." Then in the next sentence it states, that there has been only one station, 13068500, that has been monitored consistently since 1971. This station is located near the city of Blackfoot. **How come the DEQ says "stations" if there is only one and how can this information be useful for the River above the Blackfoot Reservoir?**

The second inconsistency is in the next paragraph, which addresses the decrease in average concentrations. It states, "Comparisons of suspended sediment, dissolved nitrate+nitrite, and total phosphorus between early (1971-1981) and late (1989-1997) periods all show a decrease in average concentrations". However, in the next sentence it states that only phosphorus was statistically lower. The footnote of table 2.2-1 1 states, the others remained

FORT HALL INDIAN RESERVATION
PHONE (208) 478-3901
FAX (208) 478-3909
FORT HALL, IDAHO 83203

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95% level. **Why does the DEQ say that there has been** an **average decrease?**

On page 63, section 3.2.1, there is a reference to sediment quantities in section 250 and 252. Do these sections belong to the Water Quality Standards and Wastewater Treatment Requirements 200.8? If this is the case, this needs to be referenced earlier. This paragraph has the title "Standard" and it refers to the above sections where the standards can be found, but it doesn't specify what those standards are, in the same manner that they are given in the next section under turbidity.

On page 85 in the first paragraph it says, "Nutrients have been identified as being a problem in the Blackfoot River subbasin." **Why are phosphorus and nitrogen the only two** nutrients **addressed by** the **TMDL?**

VI. Conclusion

The TMDL needs to address target levels for all of the pollutants that the River is listed for on the 303(d). An extrapolation of the data that exists needs to be done to predict the present condition of the River. The Blackfoot River TMDL needs to identify the sources of pollutants entering the River and address proper control measures.